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TECH CENTER 1600/2900

RAW SEQUENCE LISTING DATE: 12/11/2000
 PATENT APPLICATION: US/09/202,464 TIME: 13:38:20

Input Set : A:\Sequence.txt
 Output Set: N:\CRF3\12112000\I202464.raw

SEQUENCE LISTING

C--> 4 (1) GENERAL INFORMATION:
 6 (i) APPLICANT: Kino, Kohsuke
 7 Dairiki, Kazuo
 C--> 9 (ii) TITLE OF INVENTION: T-CELL EPITOPE PEPTIDES
 11 (iii) NUMBER OF SEQUENCES: 90
 13 (iv) CORRESPONDENCE ADDRESS:
 14 (A) ADDRESSEE: Fish & Richardson P.C.
 15 (B) STREET: 225 Franklin Street
 16 (C) CITY: Boston
 17 (D) STATE: MA
 18 (E) COUNTRY: USA
 19 (F) ZIP: 02110-2804
 21 (v) COMPUTER READABLE FORM:
 22 (A) MEDIUM TYPE: Diskette
 23 (B) COMPUTER: IBM Compatible
 24 (C) OPERATING SYSTEM: DOS
 25 (D) SOFTWARE: FastSEQ for Windows Version 2.0
 27 (vi) CURRENT APPLICATION DATA:
 C--> 28 (A) APPLICATION NUMBER: US/09/202,464
 C--> 29 (B) FILING DATE: 14-Dec-1998
 31 (vii) PRIOR APPLICATION DATA:
 32 (A) APPLICATION NUMBER: WO JP97/02031
 33 (B) FILING DATE: 12-JUN-1997
 35 (A) APPLICATION NUMBER: JP 8/153527
 36 (B) FILING DATE: 14-JUN-1996
 38 (viii) ATTORNEY/AGENT INFORMATION:
 39 (A) NAME: Fraser, Ph.D., J.D., Janis K.
 40 (B) REGISTRATION NUMBER: 34,819
 41 (C) REFERENCE/DOCKET NUMBER: 06501-024001
 43 (ix) TELECOMMUNICATION INFORMATION:
 44 (A) TELEPHONE: 617/542-5070
 45 (B) TELEFAX: 617/542-8906
 48 (2) INFORMATION FOR SEQ ID NO: 1:
 50 (i) SEQUENCE CHARACTERISTICS:
 51 (A) LENGTH: 354 amino acids
 52 (B) TYPE: amino acid
 53 (D) TOPOLOGY: linear
 55 (ii) MOLECULE TYPE: protein
 57 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:
 59 Asp Asn Pro Ile Asp Ser Cys Trp Arg Gly Asp Ala Asn Trp Asp Gln
 60 1 5 10 15
 61 Asn Arg Met Lys Leu Ala Asp Cys Ala Val Gly Phe Gly Ser Ser Ala
 62 20 25 30
 63 Met Gly Gly Lys Gly Gly Ala Phe Tyr Thr Val Thr Ser Ser Asp Asp
 64 35 40 45
 65 Asp Pro Val Asn Pro Ala Pro Gly Thr Leu Arg Tyr Gly Ala Thr Arg

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66      50      55      60
67 Glu Arg Ser Leu Trp Ile Ile Phe Ser Lys Asn Leu Asn Ile Lys Leu
68      65      70      75      80
69 Asn Met Pro Leu Tyr Ile Ala Gly Asn Lys Thr Ile Asp Gly Arg Gly
70      85      90      95
71 Ala Glu Val His Ile Gly Asn Gly Gly Pro Cys Leu Phe Met Arg Thr
72      100      105      110
73 Val Ser His Val Ile Leu His Gly Leu Asn Ile His Gly Cys Asn Thr
74      115      120      125
75 Ser Val Ser Gly Asn Val Leu Ile Ser Glu Ala Ser Gly Val Val Pro
76      130      135      140
77 Val His Ala Gln Asp Gly Asp Ala Ile Thr Met Arg Asn Val Thr Asp
78      145      150      155      160
79 Val Trp Ile Asp His Asn Ser Leu Ser Asp Ser Ser Asp Gly Leu Val
80      165      170      175
81 Asp Val Thr Leu Ala Ser Thr Gly Val Thr Ile Ser Asn Asn His Phe
82      180      185      190
83 Phe Asn His His Lys Val Met Leu Leu Gly His Ser Asp Ile Tyr Ser
84      195      200      205
85 Asp Asp Lys Ser Met Lys Val Thr Val Ala Phe Asn Gln Phe Gly Pro
86      210      215      220
87 Asn Ala Gly Gln Arg Met Pro Arg Ala Arg Tyr Gly Leu Ile His Val
88      225      230      235      240
89 Ala Asn Asn Asn Tyr Asp Pro Trp Ser Ile Tyr Ala Ile Gly Gly Ser
90      245      250      255
91 Ser Asn Pro Thr Ile Leu Ser Glu Gly Asn Ser Phe Thr Ala Pro Asn
92      260      265      270
93 Asp Ser Asp Lys Lys Glu Val Thr Arg Arg Val Gly Cys Glu Ser Pro
94      275      280      285
95 Ser Thr Cys Ala Asn Trp Val Trp Arg Ser Thr Gln Asp Ser Phe Asn
96      290      295      300
97 Asn Gly Ala Tyr Phe Val Ser Ser Gly Lys Asn Glu Gly Thr Asn Ile
98      305      310      315      320
99 Tyr Asn Asn Asn Glu Ala Phe Lys Val Glu Asn Gly Ser Ala Ala Pro
100      325      330      335
101 Gln Leu Thr Lys Asn Ala Gly Val Leu Thr Cys Ile Leu Ser Lys Pro
102      340      345      350
103 Cys Ser
106 (2) INFORMATION FOR SEQ ID NO: 2:
108 (i) SEQUENCE CHARACTERISTICS:
109 (A) LENGTH: 514 amino acids
110 (B) TYPE: amino acid
111 (D) TOPOLOGY: linear
113 (ii) MOLECULE TYPE: protein
115 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 2:
117 Met Gly Met Lys Phe Met Ala Ala Val Ala Phe Leu Ala Leu Gln Leu
118 1 5 10 15
119 Ile Val Met Ala Ala Ala Glu Asp Gln Ser Ala Gln Ile Met Leu Asp
120 20 25 30

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```

121 Ser Asp ile Glu Gln Tyr Leu Arg Ser Asn Arg Ser Leu Lys Lys Leu
122      35      40      45
123 Val His Ser Arg His Asp Ala Ala Thr Val Phe Asn Val Glu Gln Tyr
124      50      55      60
125 Gly Ala Val Gly Asp Gly Lys His Asp Ser Thr Glu Ala Phe Ala Thr
126      65      70      75      80
127 Thr Trp Asn Ala Ala Cys Lys Lys Ala Ser Ala Val Leu Leu Val Pro
128      85      90      95
129 Ala Asn Lys Lys Phe Phe Val Asn Asn Leu Val Phe Arg Gly Pro Cys
130      100      105      110
131 Gln Pro His Leu Ser Phe Lys Val Asp Gly Thr Ile Val Ala Gln Pro
132      115      120      125
133 Asp Pro Ala Arg Trp Lys Asn Ser Lys Ile Trp Leu Gln Phe Ala Gln
134      130      135      140
135 Leu Thr Asp Phe Asn Leu Met Gly Thr Gly Val Ile Asp Gly Gln Gly
136      145      150      155      160
137 Gln Gln Trp Trp Ala Gly Gln Cys Lys Val Val Asn Gly Arg Thr Val
138      165      170      175
139 Cys Asn Asp Arg Asn Arg Pro Thr Ala Ile Lys Ile Asp Tyr Ser Lys
140      180      185      190
141 Ser Val Thr Val Lys Glu Leu Thr Leu Met Asn Ser Pro Glu Phe His
142      195      200      205
143 Leu Val Phe Gly Glu Cys Glu Gly Val Lys Ile Gln Gly Leu Lys Ile
144      210      215      220
145 Lys Ala Pro Arg Asp Ser Pro Asn Thr Asp Gly Ile Asp Ile Phe Ala
146      225      230      235      240
147 Ser Lys Arg Phe His Ile Glu Lys Cys Val Ile Gly Thr Gly Asp Asp
148      245      250      255
149 Cys Ile Ala Ile Gly Thr Gly Ser Ser Asn Ile Thr Ile Lys Asp Leu
150      260      265      270
151 Ile Cys Gly Pro Gly His Gly Ile Ser Ile Gly Ser Leu Gly Arg Asp
152      275      280      285
153 Asn Ser Arg Ala Glu Val Ser His Val His Val Asn Arg Ala Lys Phe
154      290      295      300
155 Ile Asp Thr Gln Asn Gly Leu Arg Ile Lys Thr Trp Gln Gly Gly Ser
156      305      310      315      320
157 Gly Leu Ala Ser Tyr Ile Thr Tyr Glu Asn Val Glu Met Ile Asn Ser
158      325      330      335
159 Glu Asn Pro Ile Leu Ile Asn Gln Phe Tyr Cys Thr Ser Ala Ser Ala
160      340      345      350
161 Cys Gln Asn Gln Arg Ser Ala Val Gln Ile Gln Gly Val Thr Tyr Lys
162      355      360      365
163 Asn Ile His Gly Thr Ser Ala Thr Ala Ala Ala Ile Gln Leu Met Cys
164      370      375      380
165 Ser Asp Ser Val Pro Cys Thr Gly Ile Gln Leu Ser Asn Val Ser Leu
166      385      390      395      400
167 Lys Leu Thr Ser Gly Lys Pro Ala Ser Cys Val Asp Lys Asn Ala Arg
168      405      410      415
169 Gly Phe Tyr Ser Gly Arg Leu Ile Pro Thr Cys Lys Asn Leu Arg Pro

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```

170           420           425           430
171 Gly Pro Ser Pro Lys Glu Phe Glu Leu Gln Gln Gln Pro Thr Thr Val
172           435           440           445
173 Met Asp Glu Asn Lys Gly Ala Cys Ala Lys Gly Asp Ser Thr Cys Ile
174           450           455           460
175 Ser Leu Ser Ser Ser Pro Pro Asn Cys Lys Asn Lys Cys Lys Gly Cys
176 465           470           475           480
177 Gln Pro Cys Lys Pro Lys Leu Ile Ile Val His Pro Asn Lys Pro Gln
178           485           490           495
179 Asp Tyr Tyr Pro Gln Lys Trp Val Cys Ser Cys His Asn Lys Ile Tyr
180           500           505           510
181 Asn Pro
184 (2) INFORMATION FOR SEQ ID NO: 3:
186   (i) SEQUENCE CHARACTERISTICS:
187       (A) LENGTH: 20 amino acids
188       (B) TYPE: amino acid
189       (D) TOPOLOGY: linear
191   (ii) MOLECULE TYPE: protein
193   (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3:
195 Asp Asn Pro Ile Asp Ser Cys Trp Arg Gly Asp Ala Asn Trp Asp Gln
196   1           5           10           15
197 Asn Arg Met Lys
198           20
200 (2) INFORMATION FOR SEQ ID NO: 4:
202   (i) SEQUENCE CHARACTERISTICS:
203       (A) LENGTH: 20 amino acids
204       (B) TYPE: amino acid
205       (D) TOPOLOGY: linear
207   (ii) MOLECULE TYPE: protein
209   (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4:
211 Asp Ala Asn Trp Asp Gln Asn Arg Met Lys Leu Ala Asp Cys Ala Val
212   1           5           10           15
213 Gly Phe Gly Ser
214           20
216 (2) INFORMATION FOR SEQ ID NO: 5:
218   (i) SEQUENCE CHARACTERISTICS:
219       (A) LENGTH: 20 amino acids
220       (B) TYPE: amino acid
221       (D) TOPOLOGY: linear
223   (ii) MOLECULE TYPE: protein
225   (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 5:
227 Leu Ala Asp Cys Ala Val Gly Phe Gly Ser Ser Ala Met Gly Gly Lys
228   1           5           10           15
229 Gly Gly Ala Phe
230           20
232 (2) INFORMATION FOR SEQ ID NO: 6:
234   (i) SEQUENCE CHARACTERISTICS:
235       (A) LENGTH: 20 amino acids
236       (B) TYPE: amino acid

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237      (D) TOPOLOGY: linear
239      (ii) MOLECULE TYPE: protein
241      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 6:
243  Ser Ala Met Gly Gly Lys Gly Gly Ala Phe Tyr Thr Val Thr Ser Ser
244    1             5             10             15
245  Asp Asp Asp Asp Pro
246             20
248 (2) INFORMATION FOR SEQ ID NO: 7:
250      (i) SEQUENCE CHARACTERISTICS:
251          (A) LENGTH: 20 amino acids
252          (B) TYPE: amino acid
253          (D) TOPOLOGY: linear
255      (ii) MOLECULE TYPE: protein
257      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 7:
259  Tyr Thr Val Thr Ser Ser Asp Asp Asp Pro Val Asn Pro Ala Pro Gly
260    1             5             10             15
261  Thr Leu Arg Tyr
262             20
264 (2) INFORMATION FOR SEQ ID NO: 8:
266      (i) SEQUENCE CHARACTERISTICS:
267          (A) LENGTH: 20 amino acids
268          (B) TYPE: amino acid
269          (D) TOPOLOGY: linear
271      (ii) MOLECULE TYPE: protein
273      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 8:
275  Val Asn Pro Ala Pro Gly Thr Leu Arg Tyr Gly Ala Thr Arg Glu Arg
276    1             5             10             15
277  Ser Leu Trp Ile
278             20
280 (2) INFORMATION FOR SEQ ID NO: 9:
282      (i) SEQUENCE CHARACTERISTICS:
283          (A) LENGTH: 20 amino acids
284          (B) TYPE: amino acid
285          (D) TOPOLOGY: linear
287      (ii) MOLECULE TYPE: protein
289      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 9:
291  Gly Ala Thr Arg Glu Arg Ser Leu Trp Ile Ile Phe Ser Lys Asn Leu
292    1             5             10             15
293  Asn Ile Lys Leu
294             20
296 (2) INFORMATION FOR SEQ ID NO: 10:
298      (i) SEQUENCE CHARACTERISTICS:
299          (A) LENGTH: 20 amino acids
300          (B) TYPE: amino acid
301          (D) TOPOLOGY: linear
303      (ii) MOLECULE TYPE: protein
305      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10:
307  Ile Phe Ser Lys Asn Leu Asn Ile Lys Leu Asn Met Pro Leu Tyr Ile
308    1             5             10             15

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VERIFICATION SUMMARY DATE: 12/11/2000
PATENT APPLICATION: US/09/202,464 TIME: 13:38:21

Input Set : A:\Sequence.txt
Output Set: N:\CRF3\12112000\I202464.raw

L:4 M:220 C: Keyword misspelled or invalid format, [(1) GENERAL INFORMATION:]
L:9 M:220 C: Keyword misspelled or invalid format, [(i) TITLE OF INVENTION:]
L:28 M:220 C: Keyword misspelled or invalid format, [(A) APPLICATION NUMBER:]
L:29 M:220 C: Keyword misspelled or invalid format, [(B) FILING DATE:]